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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,533	10/30/2003	Steven E. Hobbs	132-Div1-US	2706

32763 7590 12/23/2004

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EXAMINER	
CYGAN, MICHAEL T	
ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,533	HOBBS ET AL.	
	Examiner	Art Unit	
	Michael Cygan	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-18,22,35,42-45,49 and 52-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *16-18,22,43-45 and 49* is/are allowed.

6)☒ Claim(s) *8-15,35,42 and 52-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ ~~Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)~~ Paper No(s)/Mail Date *11/10/04,11/22/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 8-14, 35, 52-58, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soga (US 2003/0230524 A1) in view of Bruno-Raimondi (US 6,437,345 B1), Wolk ("Ultraviolet Absorbance Spectroscopy in a 3-Dimensional Microfluidic Chip", Gilby (US 5,900,934), and Druy (US 6,289,149 B1). Soga teaches a high throughput liquid chromatography system comprising a plurality of separation columns [3], each filled with a

stationary phase material and connected by capillary conduits to a respective flow-through detection region [6] existing within the device, wherein the microfluidic system includes mobile phase source (Figure 2) and a fluidic distribution network (Figure 1) in a unitary adhesiveless device and performs pressure-driven chromatographic separations.

Soga teaches the device except for the use of a common radiation source in which at least a portion of the radiation is transmitted substantially coaxially within the flow axis of the detection regions which are in communication with a multi-channel detector through an optical conduit and a wavelength selection element disposed between source and detection regions.

Bruno-Raimondi teaches an HPLC detection arrangement having a common radiation source in which at least a portion of the radiation is transmitted to multiple detection regions which are in communication with a multi-channel detector through an optical conduit array; see column 8 lines 30-50 and Figures 5A-5B. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use detection arrangement having a common radiation source in which at least a portion of the radiation is transmitted to multiple detection regions which are in communication with a multi-channel detector through an optical conduit array as taught by Bruno-Raimondi in the invention taught by Soga to perform the detection apparatus, since Bruno-Raimondi teaches that this improves the detected signal to noise ratio; see column 2, lines 60+.

Wolk teaches a microfluidic detection cell having an improved optical path length such that the radiation is transmitted substantially coaxially within the flow axis of the detection regions; see page 367 paragraph 2 and Figure 1. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an improved optical path length such that the radiation is transmitted substantially coaxially within the flow axis of the detection regions as taught by Wolk in the invention taught by Soga to form the detection region flow path, since Wolk teaches a greatly improved sensitivity resulting from the improved path length.

Gilby teaches a capillary separations arrangement in which the light source for chromatography may be a deuterium arc lamp having a narrow bandpass filter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a deuterium arc lamp having a narrow bandpass filter as the excitation arrangement in the invention taught by Soga to provide excitation light, since Gilby teaches such use as being applicable for measuring separated components optically which possesses the ability to select an analytical wavelength.

With respect to a plurality of fiber optic conduits, Druy teaches the use of fiber-optic conduits for spectroscopic analysis purposes; see column 1 line 62 through column 2 line 23. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use fiber optic conduits as taught by Druy in the invention taught by Soga to direct the light, since Druy

teaches that such conduits transmit light very effectively and would thus be advantageous.

With respect to claim 12, while the length of the flow channel is not disclosed by the references to be at least about 2 mm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a length, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, See *In re Aller*, 105 USPQ 233.

Selection of any particular type of multichannel detector having a notoriously well known status in the art as an analytical detector would have been obvious to one having ordinary skill in the art at the time the invention was made.

Selection of a polyolefin material having a notoriously well known status in the art for adhesiveless microfluidic devices would have been obvious to one having ordinary skill in the art at the time the invention was made.

2. Claims 23 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soga (US 2003/0230524 A1) in view of Bruno-Raimondi (US 6,437,345 B1), Wolk ("Ultraviolet Absorbance Spectroscopy in a 3-Dimensional Microfluidic Chip", Gilby (US 5,900,934), and Druy (US 6,289,149 B1), further in view of Miroslav (US 6,296,771 B1). The claimed invention is considered to be taught as set forth in the rejection of claim 8 except for the use of ten or

twenty separation columns. Miroslav teaches the use of up to 32 columns with 32 detectors in a HPLC apparatus; see abstract and Figure 4C. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use 32 column/channel/detector arrays as taught by Miroslav in the invention taught by Soga, since Miroslav teaches the advantage of "substantial efficiencies" using such a parallel setup.

3. Claims 15 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soga (US 2003/0230524 A1) in view of Bruno-Raimondi (US 6,437,345 B1), Wolk ("Ultraviolet Absorbance Spectroscopy in a 3-Dimensional Microfluidic Chip", Gilby (US 5,900,934), and Druy (US 6,289,149 B1), further in view of Reed. The claimed invention is considered to be taught as set forth in the rejection of claim 8 except for the use of a plurality of discrete wavelength filters. Reed teaches the use of a plurality of discrete wavelength filters for multiple LC sample analysis flow through chambers; see column 16, lines 48-57. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plurality of discrete wavelength filters as taught by Reed in the invention taught by Soga, since Reed teaches that the use of different wavelengths for different samples might be advantageous.

Allowable Subject Matter

4. Claims 16-18, 22, 43-45, and 49 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: The indicated claims positively recite limitations (monochromators, wavelength dispersion elements, photomask, reference channel) which when taken in combination with the other recited elements of the claim, are neither disclosed nor fairly taught in the prior art.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

The indicated allowability of claims 8, 15, 35, and 42 is withdrawn in view of the newly discovered reference(s) to Reed and Druy as supplied in the IDS of 22 November 2004.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL CYBULSKI, PH.D.
PRIMARY EXAMINER